This email is a result of my attending the Public Hearing for Governor's Task Force On Energy Efficiency and Renewables in Milwaukee on Tuesday afternoon, June 15th, 2004. These are my comments that I was unable to provide due to time.

First of all, I will talk about this as if FOE will be what is in place when the task force is done. But whether FOE or some other entity / program does not matter, the same issues apply.

Second, my experience with most individuals involved with FOE has been they have a sincere desire to save energy and are good hard working people, despite all the issues.

1) I realize that the government budget cycle is every two years, however, it seems that it affects Focus On Energy (FOE) every year. Maybe that is due to recent events (the gutting of the program budget by Governor Doyle and the legislator). My perception is that due to all the shifting and questions being asked from the government side of the process many of the people trying to implement the program have to take far too much time working on responses and program effects. I suggest that the process is not made so difficult.

2) Because government is involved it seems like decisions take forever and getting things accomplished are slow. FOE needs to be isolated from government or it is sure to be restrained (if not altogether forced to fail) from achieving success.

3) Funding must be removed from the government. Pooling money is ok, just not as part of the state. Somehow the funds collected by the utilities should be given directly to an administrator. Having it part of what politicians can get their hands on, as is the case today, has strangled the program.

4) Energy conservation programs take time. Starting and stopping them (which is the effect of item 1, 3, and arguably 2 above) only tells customers, employees / implementers of the program, contractors, and anyone else that it cannot be relied on, that it will change so don't try to keep up with it, and that it is bogged down in bureaucracy, so don't get involved. Planning has to be long term, not annually (which is at best what is presently seen by end users).

5) Money is key to a program such as FOE. It is also critical to Wisconsin's economy. It affects many businesses not only from an energy savings perspective, but also from a provider perspective, such as presented by ACE Hardware in Milwaukee Tuesday. I know that it has affected my firm. Money spent on energy conservation typically stays in the state, having a lasting affect on the economy and jobs. Money spent on coal and other fuels drains the state of jobs and funds.

6) The issue of free rider ship should be thought out. Why penalize someone who is doing the right thing? Who cares about free rider ship? If energy is being saved, the state economy is being improved along with the environment.

7) FOE needs to continue efforts that educate consumers. There were multiple examples of why that is true given by speakers Tuesday in Milwaukee. More efforts toward rural communities need to be made, more education of energy saving technologies, more education of why it is good for Wisconsin as well as the individual. This takes time and money - more reasons why items 1, 2 and 3 need to be addressed.

8) A personal bias is that emphasis should be given to firms that are owned and operated within the state. These are our utility dollars paying for the services; it should benefit our state to the fullest.

9) State Energy Codes: Remember - state energy codes are the worst that a building can legally be built. We can and must do better. The Commissioning Process should be part of the code. The US Green Building Council states that new buildings that go through the Commissioning Process use 5 to 10% less energy. Buildings that are Re-Commissioned tend to use 12% less energy and existing buildings that are Retro-Commissioned tend to save over 20% on energy (AEE Energy Engineering Vol. 101, No. 4).

Again, my experience with most involved with FOE is that they are dedicated, hard working professionals, whether in DOA or on the contractor side. They just have a very cumbersome beast to work within. Also, this is not a place for politics - get it out, no political appointees. It only opens it up to strong-arm abuses.

Those are just some raw comments. I realize that most likely all have been discussed before and in some fashion addressed. But I want to get my two cents in and make sure that the issues are discussed again. It is too important of an economic and environmental issue for the state to fail.

Sincerely,

Ted Wilinski, P.E.
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wilinski@wi.rr.com <mailto:wilinski@wi.rr.com>
"SAVE NRG"

Thank you for your time yesterday at the public meeting. Attached you will find several pertinent supporting documents which, in addition to this letter, we would like to have forwarded to the individual members of the energy task force. These documents are offered as supporting evidence of our corporate concerns about Wisconsin state energy efficiency efforts. In brief, our concerns are as follows:

As the manufacturer of a time tested energy efficient comfort heating solution, we are concerned that not enough is being done to promote more widely and aggressively the value of genuinely energy efficient home heating solutions, particularly those which function by means of infrared energy delivery systems. Our belief and experience is that infrared heating is more energy efficient than any other form of comfort heating available. State collected public monies would be well spent to make the populace aware of this fact. Institution of programs to encourage infrared heating would ultimately yield reduced energy consumption state wide in our opinion.

Thank you again for your assistance in this regard.

Jeffrey P Wilk
President
Radiant Electric Heat, Inc.
3695 North 126th Street, Unit N
Brookfield, WI 53005

<http://www.electricheat.com/>

1-800-774-4450
1-262-783-1282
1-262-783-1284 FAX

Thank you for your inquiry regarding the efficiencies of products manufactured and supplied by Radiant Electric Heat, Inc. Our customers have told us time and again that their satisfaction with Radiant Electric Heat ceramic heaters has surpassed all expectations they held prior to living with their electric radiant heat installation. Some customers purchase our product for the flexibility and ease of installation, which is particularly appealing in home remodeling or addition projects, but end up delighted by the quality of service delivered in use. The cleanliness and comfort of radiant heat cannot be matched by other heating methods, and the additional safety of zero carbon-monoxide gas potential due to the lack of combustion for heat production is a benefit of electric radiant heat often overlooked in the decision making process, although it should be a concern of every user of a home heating product.

After you have considered this information, we welcome your questions and comments and will be pleased to provide you with more detailed information should you require it. Our contact information is at the end of this document.

Thanks for your interest in the advantages offered by
Radiant Electric Heat, Inc.

About these reports.

The first report is offered in reference to "Glassheat" heating systems. It is important to understand that at the time of this report the products now manufactured by Radiant Electric Heat, Inc. were manufactured and sold under the Glassheat trade name. The products considered in the report are the identical product supplied by REH, so comments in reference to Glassheat are fully applicable to the REH product in every way.

The second report is in regard to the Enerjoy ceiling tiles for use in acoustical panel suspended grid installations, typical of an office environment. These products are distributed though REH for the convenience of our customers.

Regardless of which product form you are considering, there is value in reading both reports to learn more about the advantages of electric radiant heat in use.

The Glassheat Report

A Comparison of Glassheat Heating and Electric Baseboard Heating
January 1978
Prepared by:
Dr. Donald L. Gochenour
Associate Professor of Industrial Engineering
West Virginia University

The study was designed to compare a Glassheat heating system with a comparable electric baseboard heating system. Under control conditions (as documented in the report) the Glassheat heating system was found to be much more energy efficient than the electric baseboard heating system. In addition, the Glassheat system provided more uniform heat distribution throughout the study areas than did the electric baseboard system.

A summary of results from the observations obtained during the study is provided below:

1. Glassheat heating reduced the average heating cycle time from 54% to 68% when compared to electric baseboard heating.

2. Glassheat reduced the watts used per day from 11% to 61% when compared to electric baseboard heat.

3. In general, the smaller the room area the more energy efficient the Glassheat heating system when compared to electric baseboard heat.

4. With Glassheat heating the heat distribution was about 31% better (more uniform) than with electric baseboard heat.

5. There was less extreme variation in room temperatures from ceiling to floor with Glassheat than with electric baseboard heat.

Submitted by:

Donald L. Gochenour, Jr., Ph.D.

The Enerjoy Report

Enerjoy Case Study

An Evaluation of Thermal Comfort and
Energy Consumption for the Enerjoy Radiant Heating System

Radiant heating systems such as the ceiling surface-mounted Enerjoy system can offer the potential for significant energy savings by warming objects and occupants and only indirectly heating the air. With fast-acting, radiant panels and thermostat control in each room, heat is supplied to the home in a manner similar to lighting.

A review of the radiant heating literature revealed little relevant, empirical evidence for energy savings and thermal comfort associated with ceiling, surface-mounted, radiant heating systems such as the Enerjoy system. Testing the energy and thermal comfort performance in an occupied home could serve to expand the base of information on which discussions of various heating strategies are based.

To this end, an Enerjoy radiant heating system, an air-to-air heat pump system, and a monitoring data acquisition system were installed in an occupied research home. Information on thermal comfort and energy consumption for alternating operation of the two heating systems was collected for approximately one-half of a heating season. Also, data on energy consumption from a zoned electric baseboard heating system previously installed in the same house was available for comparison.

In this study, for the same operating and outdoor conditions, the installed capacity of the Enerjoy system was 2.5 times less than the electric baseboard and two times less than the that of the heat pump system. Generally comparable levels of thermal comfort were provided by the radiant and heat pump systems. And the capacity of the installed Enerjoy system was sufficient to meet outdoor design conditions. As a result, the significantly reduced installed capacity of the Enerjoy radiant system should be of particular interest to utilities whose capacities are stressed or whose territories are experiencing rapid growth and development.

#####
Energy consumption savings of 33 percent were estimated for a typical record year in the Washington DC area for the Enerjoy radiant system in comparison to the air-to-air heat pump system and an estimated 52 percent savings in comparison to the electric baseboard system.
#####

The energy consumption data indicated that the Enerjoy radiant heating system would out perform both the hea pump and the electric baseboard systems regardless of climate. Because a portion of the energy savings with the Enerjoy system was related to room by room setback and the specific number and routines of the research home occupants, savings for other households may be different than those obtained in this study. The magnitud of the savings obtained from the working couple occupying the research home suggests that energy savings would be obtainable in a great portion of U.S. households.

The occupants of the test home preferred the radiant heating system to the forced-air system. They cited greater flexibility and lack of sinus irritation with the radiant system.

The energy savings demonstrated in this study indicate that fast-acting radiant systems such as the Enerjoy system have a role to play in increasing the energy efficiency of U.S. housing. It is our hope and belief that the results of this study will broaden the understanding of the home heating options available to the U.S. homeowners.

This study was conducted by the NAHB Research Center, Inc. jointly for the U.S. Department of Energy (DOE) and SSHC, Inc., Solid State Heating Division of Old Saybrook, Connecticut.

Project No. 4159 May 31, 1994

NAHB Research Center
400 Prince George's Boulevard
Upper Marlboro, MD 20774-8731
<http://www.nahbrc.org/>

These are report synopses. A full copy of either report is available from:

Radiant Electric Heat
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A hot bet

Are radiant panels a better way to heat?

By MICHELE DERUS
of the Journal Sentinel staff

Last Updated: Dec. 9, 2001

John Koenitzer's new Menomonee Falls home is built of brick, glass and a stubborn belief that one 1950s fad deserves to endure.

The chairman and retired chief executive of Helwig Carbon Products Inc. in Milwaukee is so convinced of the virtues of radiant electric panel heat that he's betting his house, and his new business on it.

"I want to prove a point," said Koenitzer. "People don't understand the true value of what I'm talking about, so I'll show them."

To that end, he bought one of the last radiant electric panel manufacturing firms in the United States, moved it from Long Island, N.Y., to Brookfield, and built his 4,000-square-foot home using its products. The wall, ceiling, baseboard, ceiling cove and portable radiant heating units are more elaborate than the glass-panel system used in 1950s and 1960s America, Koenitzer said, but they work the same way.

"They heat like the sun. You get warm quicker, because they heat objects and people, not just the air," he said.

Koenitzer's pitch for Radiant Electric Heat Inc. products: "This is the healthiest way to live, and the most comfortable."

Radiant electric panel heating differs from most fuel systems in that it warms objects, not the air. The objects absorb and radiate heat, which creates an even heat distribution without drafts, dust, fumes or odors, according to the manufacturer's literature.

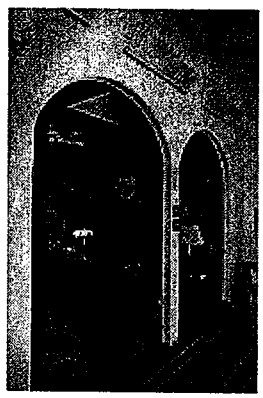
It is significantly less expensive to operate than electric convection heat and comparably priced to natural gas, according to Koenitzer. Prices start at about $200 for a small baseboard unit, electrical wiring is the same, and room-by-room zoned heating is possible, he said. Temperatures of the units range from 90 to 150 degrees Fahrenheit. "Warm to the touch, but it wouldn't burn you," Koenitzer said.

"Gas is less costly per BTU, but this doesn't require as many BTUs," he said, referring to British Thermal Units, a measure of heat.

"You're comfortable at 68 (degrees Fahrenheit); it doesn't have to be 74."

Unlike forced-air fuel systems, "the humidity level stays constant," he said, "and radiant heat does not blow at you."

Remodeling



Photo/Ronald M. Overdahl

Cove heating units are placed above th eentrance to the great room of John Koenitzer's home, which is heated with radiant electric panels.

To Learn More

For information about Wisconsin's Uniform Dwelling Code energy and insulation requirements for one- and two-family home building, see the Wisconsin Department of Commerce. Click on "Safety & Buildings," choose the site structure program pages and click on "Energy."

For information about Radiant Electric Heat, call its Brookfield office at (262) 783-1282.

Koenitzer negotiated for months with the Wisconsin Department of Commerce over whether and how his house would meet the state's Uniform Dwelling Code requirements.

"They finally became a believer," Koenitzer said of regulatory officials, "and relaxed the code."

The state code was not changed to accommodate Koenitzer, but the system was allowed for his house, said engineer Bernice Mattsson, the department's energy/heating ventilating air-conditioning program manager.

"Based on the information he provided, I agreed the home with its radiant panel system had an annual heating requirement at least 15% lower than with convective electrical resistance heating," Mattsson said.

That determination reduced the home's insulation requirements, while meeting state code requirements, she said.

Government regulators once promoted this heating form, Koenitzer noted, and he predicts they will endorse it again.

"We had this kind of heat when we raised our family and I'm convinced it's a great system. We built a home in '58 in Wauwatosa, the first Gold Medallion (energy efficiency) home in Wisconsin, back when power companies were promoting electric heat. We raised five children with virtually no illness."

The Koenitzer's Wauwatosa home was touted as the wave of the future in national magazines like Look, Life and Better Homes & Gardens, press clippings show.

"That all changed with the energy crunch in the early '70s. Electricity prices shot up and this type of heat went down the tubes along with electric convection heat, which was twice as expensive," Koenitzer said.

"It was a shame. I always wanted to have a home with this system again."

Now he does.

He believes his system is 30% to 40% cheaper to operate than other electrical systems, and comparable to natural gas systems. But he can't prove it, yet.

Koenitzer predicts that his almost all-electric home, with amenities including a heated pool but also with a gas fireplace, hot water heater and backup power generator, will cost $2,000 or less in annual fuel bills.

The Wisconsin Department of Commerce's Mattsson declined to make any predictions, beyond saying that Koenitzer's house appears to have an annual heating requirement at least 15% lower than other electrical systems.

A year from now, Koenitzer is sure his fuel bills will prove this system's promise, just as they did 43 years ago. If so, Koenitzer's Radiant Electric Heat Inc., whose clientele is concentrated on the East Coast and in offices and factories, will likely be used in more Wisconsin homes.

"I don't need the money. I don't need the business," he said. "I want to prove my point."

Appeared in the Milwaukee Journal Sentinel on Dec. 9, 2001.

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Still hot on radiant heat

Upcoming rule change by state fuels businessman's passion for source of warmth

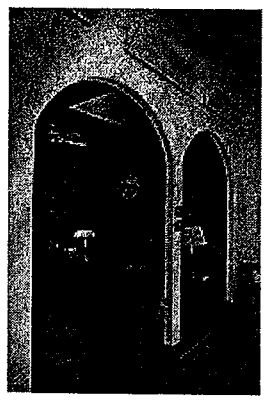
By MICHELE DERUS
mderus@journalsentinel.com

Last Updated: July 12, 2003

When Wisconsin regulators revise the state's home-building code on Aug. 1, they could spark new interest in a moribund form of home heating.

Radiant heat - which uses electric panels to heat objects instead of air - had been included in a state requirement that electrically heated homes have 15% more insulation than houses heated by more conventional means.

Energy



Photo/File

John Koenitzer's home in Menomonee Falls is warmed by radiant heat, which comes from panels like those above the entrance to his great room, in this photo from 2001.

The rule was enacted in 1987 following sharp price hikes in electric power. One man, and lots of technical data, convinced the state Department of Commerce to make an exception for radiant heat, a very efficient electrical power source.

The August change will mark the success in a long, lonely quest of Milwaukee-area businessman John Koenitzer.

"It's near-impossible for an outsider to change a building code," he said. "So this is quite a dramatic moment for me."

The 75-year-old retired chief executive of Helwig Carbon Products Inc. in Milwaukee has spent 21/2 years and a large part of his personal fortune trying to restore marketability to a heating option popular in his youth.

Several years ago, Koenitzer purchased a Long Island, N.Y., radiant heat product manufacturer and moved what now is Radiant Electric Heat Inc. to Brookfield.

In building his own radiant-heated home in Menomonee Falls, he discovered that Wisconsin would be his hardest-sell state.

Radiant Electric makes ceramic heating products that, like the sun, use long-wave electromagnetic energy to warm objects.

The objects in turn radiate heat in an arc, providing warmth that varies little from ceiling to floor.

"Radiant heat is clean, it's comfortable, it's dust-free, it's maintenance-free and it doesn't require as many Btus (British thermal units, a measure of energy) as gas," Koenitzer said. "Plus, it doesn't blow on you and there's no hot spots."

Radiant electric heat was once considered a miracle product, a harbinger of what futurists said would be an automated life of American household convenience.

Instead, the Arab oil embargo of 1973-'74 hit the world hard, ending the era of cheap electricity.

Electricity became the most expensive energy option and since 1987, Wisconsin's building code has reflected that.

But radiant electric heat is a super-efficient form of electricity, and shouldn't be treated the same as electrical convection systems, Koenitzer said.

He's been arguing that point to the state Department of Commerce, and anyone who might influence its rules, since discovering what he considered the agency's energy prejudice.

"We have talked to him several times," said Tony Hozeny, communications director for the department, which oversees the state building code.

Tom Bawolek put it more bluntly.

"That radiant heat guy who's been all over our backs for three years. He's nothing if not persistent," said the regional consultant to the Wisconsin Energy Star, the government's energy-efficiency certification program.

Koenitzer considers Wisconsin stubbornly resistant to change.

"Radiant electric heat is all over the East Coast, but here, it's always the same: 'I never heard of radiant electric heat. We don't do that here,'" he said.

Koenitzer wants to convert more homeowners to his energy preference.

For now, though, he'll settle for radiant heat not being considered inferior.

"Now it has parity with natural gas and oil," he said of the state's change of heart on radiant heat.

Hozeny didn't agree.

"I wouldn't say that this puts radiant electric panels on par with natural gas. It's hard to know whether the same size house, one heated with natural gas and one with radiant electric heat, would cost the same to fuel, because there's so many variables," Hozeny said.

Wisconsin's Uniform Dwelling Code - the rules for one- and two-family home construction - treat residences as "building envelopes" with performance standards based on overall efficiency, he said.

"You are going to save over other kinds of electrically heated homes. We know that," Hozeny said.

With regulatory penalties for electric radiant heat about to change, Koenitzer expects public recognition to follow. Still, he's glum.

"In time, I believe all our energy is going to be electric. We've got solar, wind, hydro-dams, atomic, all that sort of thing. There will be a breakthrough and then there will be just one fuel coming into homes," he said. "But it won't be soon enough. I'm 75, and won't live to see it."

From the July 13, 2003 editions of the Milwaukee Journal Sentinel

Testimony before the
Governor's Task Force on Energy Efficiency and Renewables
PUBLIC HEARING
Regarding revisions to the Public Benefits Program to ensure that the state is effectively employing energy efficiency efforts in its resource selection process.

Tuesday, June 15, 2004
State Capitol Room 411 South Madison, WI

From Tom Wilson
Suite 201 Landmark Center
500 Jefferson Street
Viroqua, WI 54665
608 637-3356
Resenergy@mwt.net
Representing Northern Thunder

Thank you for the opportunity to speak to you today. My name is Tom Wilson and I represent Northern Thunder. For over 1/3 century Northern Thunder has stood for safe and clean energy alternatives in Western Wisconsin.

History Repeats Itself

The dire prediction we now hear from the utility industry about rapidly increasing demand and lack of capacity to meet those demands were the same ones we heard back in the early eighties when these same utilities were calling for the licensing of several additional nuclear power plants in this state. One of our first major victories by Northern Thunder and its allies in the name of a clean environment and sound energy policy was the defeat of the proposed Tyrone nuclear power plant on the banks of the Chippewa River, now a much used bike trail, designated wildlife corridor and popular canoe route. This ill-planned project was defeated due to the failure of the utility, NSP (now Xcel Energy) to demonstrate that this project was necessary to meet the energy needs of Wisconsin's ratepayers. Time has proven us out: least-cost planning and even moderate application of efficiency technologies stemmed demand for new power generation and we were spared the economic burden of overcapacity that so taxed the ratepayers in Illinois and the Northeast and the Bonneville Power Administration.

A History Lesson --Back to 1985

This did not occur by accident. It was about this time that those who governed Wisconsin were going through a thoughtful review of our overall energy policies and a sister organization now merged with Northern Thunder, the Badger Safe Energy Alliance, had the foresight to invite the esteemed Armory B. Lovins of the Rocky mountain Institute to speak before the Wisconsin Public Service Commission.[1] *Least-Cost Electricity Strategies for Wisconsin, Practical Opportunities to Save Over a Billion Dollars a Year* proved to be the seminal document which governed our state's energy regulatory strategy for the next 10 or 12 years. This policy demanded not only reliability and environmental prudence but that the choice among alternatives for any major utility project be based on what is the least-cost alternative for meeting our State's energy needs--from the perspective of the ratepayer and the Wisconsin economy as a whole. The net result of this decision was an extended period of

- high levels of economic growth in the state
- no new demands for additional generation or distribution capacity
- unprecedented return on investment for the utility industry itself
- unmatched reliability of the system
- minimal degradation of the environment from our choices
- and virtually level energy prices for consumers--even without the necessity of adjusting for inflation.

[1] Lovins, Amory B. *Least-Cost Electricity Strategies for Wisconsin, Practical Opportunities to Save Over a Billion Dollars a Year*, sponsored by the Badger Safe Energy Alliance, Sept 24, 1984

Move Ahead 12 years
What was wrong with this picture? The obvious analysis would be nothing and "if it weren't broke, why try and fix it? Unfortunately, the powers that be in Madison and Washington came to mandate that we throw out this entire successful system in the name of some theoretical benefits that would accrue from deregulation and allowing "market forces" rule irrespective of the environmental, economic or efficiency sacrifices that might come in its way. From the utilities perspective, their main problem was an overabundance of riches. In fact, under this highly successful regulated framework, the utilities were accumulating *too much* capital that they were not allowed to invest beyond Wisconsin's borders. They wanted to join the great stock market boom that was blurring the vision of so many in this country that unlimited return on investment was available in real estate and the high tech boom. Well, we know what happened to that.... Here is Wisconsin and across the nations, from the first saber rattling of the deregulation movement, utility support for demand side management programs plummeted.

Another high profile task force was set up with representatives from all sectors –I suspect some of the same groups and maybe even the same individuals on the present task force. They negotiated long and hard, but they managed to come to a compromise –and an agreement with the people of Wisconsin to forge a new utility regulatory policy. The policy that evolved from this process allowed the utilities to go their own way and invest their capital however they see fit... with a stipulation that, in return, a certain percentage of all ratepayers dollars (for investor-owned utilities) would be allocated to programs that assured protections for those less fortunate, increased investment in sustainable technologies and market transformation in efficiency and conservation technologies to reduce our energy needs.

Who Won
As it turned out, the utilities got virtually everything they wanted; Xcel was allowed to invest its resources outside the borders of its market territory and is now suffering from devaluation of its economic viability. Upstart firms with little stake in Wisconsin communities are lining up to see who can build the most generation or transmission capacity irrespective of local needs, forcing landowners to sacrifice their property rights for unneeded power lines and polluting power plants. Some are even proposing to encourage new nuclear power plants or sell our existing nuclear liability to holding companies out of state. Where is the long term benefit to Wisconsin residents in that?

Who Lost
Meanwhile, the people of Wisconsin--the ratepayers--who supposedly were also at that negotiating table and for whom it was promised that their utility surcharge would be spent on providing state-wide efficiency programs, reducing demand, encouraging development of sustainable alternative energy resources--these ratepayers were betrayed in the last biennial budget. Both Republican and Democratic legislators and the administration agreed to rob the dedicated revenues from ratepayer surcharges --these monies which were supposed to be building the infrastructure to provide scientifically-guided advice to builders and homeowners, to encourage the installation of the best technologies that Wisconsin manufacturers such as Carrier can provide, to delivering proven efficiencies, healthy homes and reducing the hemorrhage of energy dollars across our state borders. Rather than providing all these public benefits to the ratepayers of Wisconsin, these dedicated funds are now diverted and paying for prisons and interest payments on bonds for unnecessary road construction and other politically favored projects.

It's NOT the same as the DOT budget
When I have raised this issue with members of this esteemed panel, the response has been that all state programs took a hit to meet the budget shortfall including other committed, engrossed or dedicated funds such as the Department of Transportation. I find this response particularly disingenuous since almost simultaneous with passage the biennial budget bill, the legislature also approved a bond for over a half billion dollars for road building, essentially taking the DOT expenditures off budget, providing them with far more money than they were originally

scheduled to receive and allowing the start up of numerous unpopular road building programs across the state which had previously been put on indefinite hold.[2]

The Economic Benefits of Efficiency
The economic issues, seem to be a no brainier and the success of our own history of the least-cost planning process versus the economic devastation that has occurred in California and so many other localities that have ignored this economic oversight should be a red flag to all. A dollar spent on importing any form of non-renewable energy is a dollar that leaves the Wisconsin economy. A dollar spent of efficiency is a dollar saved and one that circulates through our economy again and again. If you ask anyone in the business whether it be an engineer, a utility executive or a PSC member what is the most cost-effective means of meeting our energy demand, they will all give lip service to efficiency. So why is we are dead set on defunding the key efficiency program in the state and throwing all our resources into new supply-side projects with all their negative economic and environmental consequences?

The Environmental Benefits of Efficiency
I'm not even going mention them – you know what they are. You either care or you don't.

An Illegal Diversion of Funds
If good finance and the well-being of the people of Wisconsin were not enough, this budget theft is decidedly unconstitutional: Article VIII. Finance Rule of taxation uniform; income, privilege and occupation taxes. SECTION 1.state very clearly that "The rule of taxation shall be uniform but the legislature may empower cities, villages or towns to collect and return taxes on real estate located therein by optional methods."[3] When the Legislature with the Governor's approval voted to absorb over one third of these public benefit funds into the general revenue budget is the equivalent of imposing a tax on just those ratepayers of investor-owned utilities—not on the members of the numerous co-ops or municipal lines who chose not to participate in the Focus Program.

We are now being asked by this task force to ask our legislators to not steal too much more from this program. That is not enough. What the legislature and the Governor did was both illegal and a direct repudiation of their promise to the people of Wisconsin in the restructuring compromise. We at Northern Thunder invite the collected stakeholders who are present here in Madison, in Eau Claire, in Green Bay and Milwaukee to join us in considering the merits of a class-action suit against the legislature to assure full restoration of all public benefits funds back to its rightful purpose of assuring efficiency in our State's energy use retroactively to the passage of the last biennial budget.

Focus on Energy; Designed to Fail
Those more timid than I, those who have an important stake in maintaining some level of support from this program, are saying "Don't challenge them; they may scrap the program entirely." I too was sympathetic to this...until I attended the one of the recent PSC hearings on the "Energy 2010 Strategic Energy Assessment." Although the public slide show gave lots of lip service to efficiency and renewables, we know in the best of times these components only receive a small fraction of the investment dollars that are spent on fossil fuels, nuclear and new transmission. Their projections on the success of these programs was not very promising.

If you want a program to look bad, there is a very simple formula:
1. Abandon all existing programs
2. Start from scratch
3. Promote is heavily as a panacea

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[2] 2003 Wisconsin Act 33, the 2003-05 Biennial Budget Act, expanded the issuance of bonds. It stipulated that $565.5 million in general obligation bonds will be issued to fund, for the first time, rehabilitation projects and the southeast Wisconsin freeways program. Debt service costs for these bonds issued in the 2003-05 biennium will total $767.6 million through FY 2024-25. An Evaluation: Major Highway Program Department of Transportation November 2003 Report Highlights http://www.legis.state.wi.us/lab/reports/03-13highlights.htm

[3] State of Wisconsin Constitution ARTICLE VIII. FINANCE. Section 1. Rule of taxation uniform; income, privilege and occupation taxes [*As amended Nov. 1908, April 1927, April 1941, April 1961 and April 1974*].

4. Disperse its services among a variety of dispirit entities and don't try to integrate the effort
5. Throw lots of money at it at first
6. As soon as the program gets through it growing pains, has its infrastructure in place and has made lots of promises to subcontractors and the consuming public, introduce uncertainty by cutting back funds
7. And as soon as the program adjusts to operating under reduced funding opportunities, cut the funding even more
8. Don't look at the data to measure its effectiveness.

It's Deja Vu All Over Again: History Repeats Itself

I've been in the efficiency business since 1974 and I have seen this same pattern for thirty year: Carter sets up the Moral Equivalent of War and the first thing Reagan does when he gets in the White House is tear off the solar collectors. This cycle has been repeated over and over again. We are back to where I started and to a large extent our present dilemma is summarized in the Strategic Energy Plan section on Analysis of Energy Efficiency Efforts"

> It is not possible to determine if past and projected energy efficiency efforts are adequate. Funding for public benefits was determined by the legislature after considerable debate among various stakeholders. It was not based on an analysis of energy efficiency potential and the cost to achieve that potential. There is no current potential study upon which to determine the adequacy of energy efficiency efforts. The most recent potential study was completed in 1994. There have been considerable changes to the energy efficiency infrastructure since that time, including new energy efficiency technologies on the market, lower costs of many energy efficient technologies, and changes in avoided costs. These changes make the decade-old study unreliable to use to determine the appropriate level of energy efficiency activity.[4]

Not only hasn't anybody done a projected savings analysis, we aren't even measuring the savings we are getting from the present effort. Every home that comes into the program from one of the participating communities has at least a two year track record of its energy consumption on file. And virtually every other home touched by the infrastructure built by this program (customers of non-participating utilities) also have energy historic energy consumption records. *But nobody is collecting or analyzing the data!* The only analysis that is presently occurring is based on a fairly simplistic computer simulation on the measures for which incentive rewards are being granted. There is not sufficient room here to outline the vast amount of efficiency improvements that are overlooked by this narrow modeling, but suffice it to say, there is no comparison to actual measured energy savings.

It is not that the utilities don't know how to do this analysis. You can bet when the utilities were being reimbursed for achieved energy savings under the least-cost planning model, they were out there tracking actual energy consumption. There is no reason that cannot be required today on 100% of the houses and other institutions served by this program. If we don't look for the savings it is because we don't want to know and the only reason we wouldn't want to know is because we want the program to fail so energy demand keeps escalating fulfilling the utilities' projections.

Wisconsin's Focus on Energy and our entire State energy policy has become a political football with the big contributors calling the shots. Northern Thunder as a grassroots representative of citizens and consumers, we are not willing to grovel for crumbs in terms of energy policy. If the politicians of both parties are unwilling to look to the sound science and the environmental and economic benefits for the people of Wisconsin instead of the shareholders of the major energy holding companies, then we have lost our place in the pantheon of progressive states with regard to forward-looking energy policy and programs. There is no other alternative: efficiency should be our first priority!

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[4] *Wisconsin Public Service Commission Strategic Energy Plan*, "Analysis of Energy Efficiency Efforts", p. 65, 2004.

June 15 2005

Dear Members of the Governor's Energy Task Force

Due to prior commitments, I was unable to attend the Public Hearing from for the Governor's Energy Task Force held on June 15 2004. This written testimony replaces what I would have said to the Task Force.

First, I am very concerned about the future of powering and heating Wisconsin. I know that if we continue our current building, purchasing and behavioral practices that:

- Electric rates and natural gas prices will increase faster than inflation, thereby hampering Wisconsin's economic welfare.
- Increasing amounts of natural gas (for home heating, industrial production, and fertilizer production (a.k.a. food production)) will be imported from abroad (largest reserves are in Russia and the Middle East). Thereby increasing our dependence on those unstable areas of the world.
- Wisconsin will first be forced to build first more polluting coal plants and then new nuclear power plants.
- Continue to poison our water and children with mercury.
- Continue to cause thousands of premature deaths from air quality problems.
- Continue adding carbon to the global warming problem.

Unless we transform how Wisconsin uses and generates energy!

The Focus on Energy program is currently the best way to begin turning the tide – while creating high quality jobs and reducing the export of Wisconsin dollars for fossil fuels. The Focus on Energy program is very successful and if funded at the level originally determine is Wisconsin's best hope for overcoming the issues noted above. (Better yet would be to increase funding.) The Focus on Energy strategy for transforming the market place works!

Many of the policy recommendations made by the Governor's Task Force will also better secure Wisconsin's well being. Particularly growing and supporting the generation of Wisconsin-sourced renewable energy. I wholly support waiving sales taxes on small renewable energy projects, increasing the state's RPS and increasing the state's purchase of renewable energy.

I also feel that the Wisconsin should begin to take seriously its offshore wind energy resource and begin trying to understand how to best prepare the Wisconsin's public for its eventual use.

I strongly oppose the Doyle Administration's illegal raid of the public benefits funds. I strongly encourage the Task Force to protect the Focus on Energy funds from both the Governor and the Legislature.

Thank you for a job well done! Now if only the Governor will listen?

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Testimony of Dan W. York, Ph.D. on behalf of the
American Council for an Energy-Efficient Economy
Before the
Governor's Task Force on Energy Efficiency and Renewables
15 June 2004

Introduction

I am here as a representative of the American Council for an Energy-Efficient Economy (ACEEE), a leading national nonprofit organization dedicated to research and policy development to advance energy efficiency as a means of promoting energy security, economic prosperity and environmental protection. I have Ph.D. and M.S. degrees from UW-Madison's Gaylord Nelson Institute for Environmental Studies, with an emphasis in "Energy Analysis and Policy." I also have a bachelor's degree in mechanical engineering from the University of Minnesota. I know the Wisconsin energy situation very well, having worked as a project manager at the Energy Center of Wisconsin for five years before accepting my current position with ACEEE.

Purpose of Testimony and Summary Points

My purpose today is to voice strong support for Wisconsin's Focus on Energy Program and the on-going need for publicly supported energy efficiency and renewable energy programs in Wisconsin.

I have been actively following the work of the Governor's Task Force, and have been greatly encouraged by what I have observed and heard. There clearly is a strong consensus that energy efficiency and renewable energy are critical elements of Wisconsin's energy resource picture today and into the future. This is no surprise or news. The Wisconsin Legislature, in fact, established energy efficiency and renewable energy as the state's preferred energy resources when it passed the "Energy Priority" Statute. And Wisconsin has a long record as a national leader in capturing these resources through innovative and effective programs.

What has been in question, though, is how best to re-commit and re-establish the leadership Wisconsin has had in providing programs and enacting complementary policies to ensure that Wisconsin is able to harvest energy efficiency and renewable energy resources effectively.

My testimony focuses on energy efficiency policy and programs. My main points are:

1. Funding for energy efficiency and renewable energy needs to be consistent, reliable and at levels sufficient to achieve desired impacts.

2. Analysis and planning for energy efficiency need to be integral and on-going elements of utility-system and state-wide energy planning.

3. Administration and implementation of public benefits programs can be accomplished successfully via a variety of mechanisms. Which mechanism—or mechanisms—Wisconsin chooses should be based on which mechanisms are best suited to Wisconsin's existing institutions, markets, customer needs and infrastructure.

4. In addition to funding for energy efficiency programs, Wisconsin should establish energy efficiency standards for selected appliances and end-use technologies.

Major points

Funding for energy efficiency and renewables needs to be consistent, reliable and at levels sufficient to achieve desired impacts.

Wisconsin was a pioneer and innovator in recognizing that it was critical to examine energy options on both the supply *and demand* side. An alternative to building and operating additional power plants was to take actions to decrease demand through improvements in the energy efficiency of homes, businesses and industries. Wisconsin was one of the first states to require its utilities to take an integrated approach to resource planning. Through a wide menu of utility programs, ratepayer dollars went not just to newer and bigger power plants, but also to better light bulbs, heating systems and industrial processes.

The result was that Wisconsin became the envy of many states who failed to make such prudent decisions. Here we truly "had it all" when it came to our electricity system—low rates, good customer service, a healthy environment, high reliability, and stable, low overall customer energy costs. Customers were able to receive assistance through effective energy efficiency programs that helped them achieve greater levels of energy efficiency in their homes, businesses, factories and institutions.

After a long period of low and even no-growth in energy demand, we now are entering a period of major construction—with plans for about $7 billion of investments in new power plants and related infrastructure, such as transmission lines. At the same time, Wisconsin's efforts to invest in energy efficiency have faltered as funding for Focus on Energy was drastically cut to help address the state's budget crisis. Wisconsin also lost its leadership in addressing energy efficiency as an integral and important element in critical energy planning decisions before the Public Service Commission of Wisconsin. The result has been that contrary to the Energy Priority Statute, Wisconsin is making such major energy resource decisions without adequate consideration of demand-side and renewable energy options.

If we are going to continue to enjoy Wisconsin's enviable status in terms of our electricity system, we need to continue to support energy efficiency and renewable energy to be part of our future energy picture.

Energy efficiency is a resource that requires consistent, reliable programs to work with customers. Widely fluctuating levels of support for energy efficiency can greatly damage program effectiveness as it sends customers and trade allies confusing messages and erodes program recognition and credibility. Customer and trade ally awareness and trust are fragile commodities; if a program loses these through sudden cut-backs and loss of services, it can take a long time and great effort to restore customer confidence and participation in programs.

An argument sometimes made against energy efficiency programs is that they aren't really needed since customers will make the "right" decisions for energy efficiency improvements and new purchases. However, real world experience demonstrates clearly that customers across all sectors under-invest in energy efficiency. Decades of experience and research studying consumer behavior—including recent research by my own organization[1]—show clearly that customers do not make the kinds of energy efficiency improvements that would yield "paybacks" to them directly, and in turn yield broader economic, security and environmental benefits to society as a whole. Unlike the models of economists, energy markets are not perfect. Customers lack complete and accurate information. They lack incentives to invest in energy efficiency. Their decision making is driven by low first cost—not long term savings

[1] *Can We "Just Rely on the Market" to Provide Energy Efficiency?* M. Kushler and P. Witte, 2001, American Council for an Energy-Efficient Economy (ACEEE), Washington, D.C.

and value. Environmental damage isn't fully included in customer costs. Energy efficiency itself is generally a low priority and factor for consumer purchase decisions. These and other market "imperfections" and "barriers" cause customers to not invest in levels of energy efficiency that are clearly cost-effective.

As a result of this under-investment in energy efficiency, more costly investments in building, operating and fueling power plants are made than would otherwise be necessary. This raises energy costs for everyone in the state.

All customer sectors—residential, commercial, agricultural and industrial—offer great opportunities for energy savings through increased energy efficiency. In a recent "meta-analysis" of eleven studies of energy efficiency potentials, ACEEE[2] found that estimated achievable electricity savings potential in total (all sectors) ranges from 10-33%. While the timeframes used in these 11 studies vary from 5-20 years, the results show clearly that there truly is an energy efficiency resource available, even in states that have long records of capturing this resource, such as California and New York.

Moreover, these resources can be captured quite cost effectively. In our recent review of public benefits energy efficiency programs,[3] we found that for a set of six states—California, Connecticut, Massachusetts, New Jersey, New York and Vermont—the median cost of conserved energy was $0.03/kWh, which is less than half the total cost of building, fueling, operating and delivering power from a conventional power plant. And evaluations of Wisconsin's own programs—Focus on Energy—has shown them to be very cost-effective, with a benefit-to-cost ratio of 3.0 for the portfolio of programs.

The Administrative Model and Funding Working Group has identified funding security and funding adequacy as primary issues that it is addressing. ACEEE concurs that these are critical issues to be resolved to assure that Wisconsin has mechanisms in place with sufficient levels of funding to capture the substantial energy efficiency resource that exists in the state.

Analysis and planning for energy efficiency need to be integral and on-going elements of utility-system and state-wide energy planning

I have been directly involved in two recent research projects that demonstrate how Wisconsin's role as a leading state for providing strong support for energy efficiency has decreased from the 1980s and early 1990s.[4] We found that statewide spending in Wisconsin on efficiency programs—and corresponding energy savings resulting from such programs—reached low points in 1997. We also found that other states and regions of the U.S.—the Northeast, the Northwest and California—are clearly leaders in terms of the number and quality of programs offered to customers.

Focus on Energy was created with support from a broad coalition of business, consumer and environmental groups to address this recognized need for publicly supported energy efficiency programs and to rebuild programs from the lows reached in the late 1990s in terms of funding and savings. As a

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[2] "The Technical, Economic, and Achievable Potential for Energy Efficiency in the United States: A Meta-Analysis of Recent Studies," S. Nadel, A. Monis Shipley, R. N. Elliott, *Proceedings of the 2004 Summer Study of Energy Efficiency in Buildings, ACEEE,* Washington, DC.

[3] *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies,* M. Kushler, D. York and P. Witte, 2004, ACEEE, Washington, D.C.

[4] *State Scorecard on Utility and Public Benefits Energy Efficiency Programs: An Update,* D York and M. Kushler, 2002, ACEEE, Washington, D.C. Also, *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies.* M. Kushler, D. York and P. Witte, 2004, ACEEE, Washington, D.C.

result, by 2002 Wisconsin had seemed to be back on track to regain this kind of leadership. Unfortunately, the more recent funding diversions during the latest state budget process threaten this recovery. At this time, it is crucial that Wisconsin re-establish the leadership and strong commitment to energy efficiency as a least-cost, environmentally friendly resource that can play a critical role in meeting today's and tomorrow's customer energy needs.

One of the proposals that has been discussed by the Governor's Task Force and in other forums would be the creation of a separate proceeding before the Public Service Commission of Wisconsin that would specifically address energy efficiency in the context of system needs. This process would take a comprehensive look at energy efficiency periodically—perhaps every five years. This type of examination would have numerous objectives, which likely would include assessments and analysis of:

- The size and extent of energy efficiency resources—especially new market and technological developments,
- Barriers to achieving greater levels of cost-effective energy efficiency; and
- Progress to date in capturing these resources, and
- Forecasts of expected program impacts—both existing and possible new programs.

The outcome of such a proceeding would be the establishment of statewide energy efficiency objectives and appropriate levels of activity (in terms of funding and programs) for the period until the next energy efficiency assessment, which might be about 5 years. This type of proceeding would help establish a solid basis for determining the relative adequacy and availability of demand-side efforts in relationship to decisions needed on supply-side infrastructure—power plants and transmission lines. We support the development of this kind of periodic, comprehensive examination of the energy efficiency resource in Wisconsin.

We are encouraged that efforts are underway in Wisconsin to conduct a comprehensive analysis of the energy efficiency potential in the state (to be performed by the Energy Center of Wisconsin with funding from Wisconsin's utilities). This kind of study is critical to address issues regarding the magnitude, scope, and costs of energy efficiency.

Administration and implementation of public benefits programs can be accomplished successfully via a variety of mechanisms. Which mechanism—or mechanisms—Wisconsin chooses should be based on which mechanisms are best suited to Wisconsin's existing institutions, markets, customer needs and infrastructure.

In two recent national reviews of leading energy efficiency programs, we found successful examples of programs offered by a wide variety of organizations under a variety of different structures for administration and delivery of services.[5] In a recent analysis of public benefits policies and programs in a set of about 20 states that offer such programs, we concluded:

> *[W]e still see proven success with public benefits energy efficiency programs using a variety of different administrative strategies, indicating that states can have the flexibility to tailor public benefits approaches to their unique circumstances.*[6]

[5] *America's Best: Profiles of America's Leading Energy Efficiency Programs,* D. York and M. Kushler, 2003; and *Responding to the Natural Gas Crisis: America's Best Natural Gas Efficiency Programs,* M. Kushler, D. York and P. Witte, 2003, ACEEE, Washington, D.C.

[6] *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies.* M. Kushler, D. York and P. Witte, 2004, ACEEE, Washington, D.C.

Successful, cost-effective energy efficiency programs are offered and are flourishing under a variety of administrative and implementation structures. There is no one "best" way to offer such programs. Rather, programs that succeed share a common trait that they build on the strengths, experience, and circumstances of a state or region in working with customers and key allies to meet customer needs and common objectives.

We are encouraged by the proposals being developed by the Administrative Model and Funding Working Group. They are working to build on the strengths, experience, and organizational capabilities here in Wisconsin for providing energy efficiency programs and services. They also are looking at these questions from the perspective of customers, which is critical to determine the best approach—or approaches—to take. There indeed may be different answers according to the different needs and characteristics of different types of customers. The Working Group recognizes this, and is rightly avoiding the artificial constraint of trying to find a "single" model to follow to provide all programs and services to help Wisconsin energy customers become more energy efficient.

In addition to funding for energy efficiency programs, Wisconsin should establish energy efficiency standards for selected appliances and end-use technologies.

The Codes and Standards Workgroup has identified "General appliance standards" as an area for ongoing discussion. The workgroup's memo references model legislation developed, in part, by my organization, the American Council for an Energy-Efficient Economy. I urge the Task Force to develop a recommendation for new state legislation establishing certain appliance energy efficiency standards.

Based on analysis that we have recently updated, a broad package of state level appliance standards could reduce statewide electricity use by 532 gigawatt-hours by 2010 and 1,100 gigawatt-hours by 2020. Some of the recommended standards would also save considerable amounts of natural gas and water. The net present value for consumers and businesses owning and operating affected products would be nearly $740 million.[7]

In developing the model legislation, we selected products for which near term state level standards are most appropriate. We used the following criteria to select products for the model bill:

- The energy savings would be significant for a state;
- The standard would be very cost effective to purchases and users the product;
- Products meeting the recommended standard are readily available on the market today from multiple manufacturers;
- Standards for these products are not preempted by federal law, and;.
- Consensus test methods for rating efficiency exist.

All of the recommended standards have either been adopted by at least one other state or are pending adoption in another state.

[7] ACEEE has developed individual estimates for each of the seventeen products for which we recommend near term standards. The ACEEE model develops energy saving estimates be estimating state level sales, energy savings per unit, the market penetration of equipment that already meets the recommended standards and adjusting for climate when necessary. Economic benefits are determined using the most recent statewide energy prices, best available data on the current market incremental costs of equipment meeting the recommended standard and a real 5% discount rate. Detailed results and methodology can be provided by ACEEE.

Altogether, our package of recommended state level standards covers 17 product categories. Most likely, not all seventeen make sense for Wisconsin. ACEEE would be pleased to help identify which product standards among those generally recommended make sense here. Examples of affected products include exit signs, certain types of lighting equipment, commercial refrigerators, natural gas unit heaters, and external power supplies for electronics.

Several states have recently acted to establish similar appliance standards. California adopted new standards in 2002 and this year both Connecticut and Maryland have enacted standards legislation based on our model bill. Similar bills are pending in several other states including New Jersey and Pennsylvania.

While adoption of appliance standards would greatly advance energy efficiency in Wisconsin, this action would not negate the need for continued funding for Focus on Energy and other energy efficiency programs. Adoption of energy efficiency standards for appliances would complement these programs by helping to remove the worst and most inefficient products from the market. The programs help push for greater efficiency by stimulating the purchase and use of the highest efficiency products. Together standards and programs move markets towards providing consumers higher efficiency products and services.

Closing Remarks

Thank you for providing this opportunity to present my remarks supporting strong public policies for energy efficiency and renewable energy programs in Wisconsin. I would be happy to provide follow-up information on any of the points I raised, as well as on related topics.

Respectfully submitted,

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